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ABSTRACT

In this paper some of the literature on problems in education is reviewed and several of these problems are discussed. These are: (1) educational inequality; (2) coping with the knowledge explosion; (3) dealing with masses of students in the nation's large institutions of higher education; (4) youth dissatisfaction; and (5) the attempt to implement a systems approach in education. These problems are all symptomatic of the demand for change. There is a demand for a better definition of "where we're going," and though society wants education for the masses, it doesn't want mass education. There is demand for individualized instruction, but a meaningful program of individualized instruction can only be constructed if behavioral objectives are clearly established. It is essential that instructors at all levels acquire the skills needed to prepare statements of behavioral objectives if the individualization of instruction is to proceed. (AF)

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Behavioral Objectives and Individualization of Instruction

by

William H. Melching

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Prefatory Note

This paper was presented as part of a symposium entitled "The Role of Behavioral Objectives in College Instruction," given at the 16th annual meeting of the Southwestern Psychological Association, held in April 1969 at Austin, Texas. The paper was prepared at HumRRO Division No. 5 (Air Defense), Fort Bliss, Texas, where the author is a member of the research staff.

Dr. Melching was chairman of the symposium. Other participants were Dr. William R. Reevy, of New Mexico Institute of Mining and Technology, Socorro, New Mexico, whose topic was, "Behavioral Objectives and Undergraduate Instruction," and Dr. Luiz F.S. Natalicio, of The University of Texas at Austin, who spoke on "A Strategy for the Attainment of Behavioral Objectives."

BEHAVIORAL OBJECTIVES AND INDIVIDUALIZATION OF INSTRUCTION

William H. Melching

There is a great deal of discussion about the adequacy of education in our country today. Many people are concerned that present educational practices may not enable youth to meet the demands of a rapidly changing world. Some writers, in fact, speak openly of the need for change (1, 2, 3). There is a growing realization, apparently, that the world of tomorrow will be vastly different from that of today. There will be demands for new kinds of adjustments, new skills, new knowledge, and other new behaviors. In our world, according to Adelson (4), " . . . education has become as essential to survival of the species as procreation." In substance, education is in process of shifting its demands, its expectations, its requirements. The cry is for change. But *to* what—*from* what? And *how* shall the change be accomplished?

Factors in Educational Problems

Several factors have contributed to the educational problems that currently confront our nation; educators and people from allied professions have been remarkably busy attacking them. In fact, the educational communities within our nation have struggled valiantly to "modernize" and to provide educational experiences commensurate with the needs and expectations of an increasingly complex, technological society. Such efforts, however, have not always met with success (5). Problems associated with the education of youth have created a special educational burden. Too often, it seems, education has failed to provide youth with the knowledge and skills that will enable them to function effectively in today's world—let alone in the world of tomorrow.

Educational Inequality. Perhaps one of the greatest problems facing us as a democratic nation is our apparent inability to provide equal opportunities for success to all individuals. Nowhere is this more evident than in our instructional systems. While we speak on the one hand about educational equality, the products of our instructional systems reflect, on the other hand, a basic, deep-rooted inequality. One index of this inequality is academic retardation, a characteristic prominent in many of the youth of today—especially among members of the so-called "culturally disadvantaged"—the Negro, Puerto Rican, Mexican, and rural or mountain southern white (6).

While the educational community has attacked the problem of inequality with some vigor, the scholastic gap has not been narrowed (7). At the same time, to criticize the professional educator by saying that

he lacks imagination in his approach to the problem does not seem warranted. On the contrary, suggested solutions have been broad in scope.

Knowledge Explosion. A second factor contributing to the burden of our educational communities is the prodigious increase in growth of knowledge. Commenting on the "information explosion" in our society, Licklider (8) has suggested that, at the present rate, the size of the printed record of science and technology will double within 10 to 15 years. Kuhn and Walter (9) are even more "optimistic" about the growth of knowledge. They maintain that not only has the world's knowledge doubled in the last 10 years, but that it will begin doubling every three months by 1975!

Reporting for a group of behavioral scientists, Libaw (10) commented that there is an "explosion of concern" about the exponential growth rates of information and the adequacy of communication in the behavioral sciences. In speaking of the impact of the knowledge explosion, Mee (11) noted that the knowledge deluge is a source of great cost to society. As one example, if today's educator wished to maintain competency in his field of specialization, he would have to read 13 hours a day for 365 days! Mee comments further that there were nearly 30,000 new books published in the United States in 1965, not including the publications of the U.S. Government Printing Office. Many others have commented on the growth of knowledge and on the implications of this growth for the storage and retrieval of information (12, 13). In fact, a recent text has been devoted entirely to the problem of knowledge growth and the development of information technologies (14).

This rapidly expanding growth of knowledge has necessarily had some bitter ramifications for the educator, no matter at what level of instruction. Above all, it has increased the magnitude of instructional content with which the educator must deal. In other words, textbook writers, wishing to be up-to-date and comprehensive, have sought to include more and more concepts, facts, and ideas within the covers of their books. And when that is no longer possible, they write more books! The educator, however, faced with class periods of constant size, has had to devote less time to each concept or idea, or has had to be quite selective in the content of the instruction that he "covers." One way he can be selective and delete content is to insist that the instruction be accomplished at an earlier age or grade level! This, of course, solves the problem for one instructor while creating a new problem for another instructor. Trying to include more content earlier in a student's life may have its laudable aspects, but this approach soon reaches its limits. The solution may be one of selection, but of a somewhat different nature.

Increased Numbers of Students. A third factor of importance is simply the tremendously large number of individuals in our society who are receiving instruction in one of America's biggest industries (Adelson, 4). He estimates that in some 125,000 schools and 2,500 colleges and universities across the country, there are well over 50 million students and more than 2 million teachers.

Crowding in the classrooms of the country is now so commonplace that it tends to be accepted as normal. One may guess that new classrooms are being constructed not so much to alleviate the congestion as to keep school facilities "even" with student input.

One source (15) cites a prediction that between 1965 and 1975 the number of first-time enrollees in junior colleges in the country will jump from 401,000 to 626,000, an increase in enrollment of 56%. Another source (16) predicts that by 1976 the total enrollment will be 62 million. This includes regular public and nonpublic elementary and secondary schools and enrollment in all kinds of programs in institutions of higher education. Compared with the 56 million enrollment of 1966, this is an increase of over 10%. Still another source (17) declares that the college-age population is doubling every decade or so.

Dissatisfaction Among Youth. This factor could easily be subsumed under the first factor—educational inequality—but in some respects its impact extends far beyond "mere" inequality. One can hardly read a newspaper or news magazine, or view a national news telecast, without being poignantly aware that a number of today's youth—especially those in college—are dissatisfied, disenchanted, and perhaps even disgusted with the thing they call "the establishment."

For example, the January 1969 issue of *Fortune* magazine is devoted entirely to how the outlook of American youth is changing the world. An article by Max Ways (18) suggests that no matter how one diagnoses or describes the problem, the faculty is the real culprit.

In commenting on some recent innovations in higher education, O'Toole (17) listed several dissatisfactions commonly voiced by students. Among these were:

(1) Lack of individual attention.
(2) Discontent with mass education.
(3) Feelings of loss of identity.

In addition, some students feel that there is too much emphasis on passing quizzes and not enough on learning. This is related, of course, to the emphasis institutions place on grades. And still another complaint centers on the limited choice the student has when choosing a program of study. Only rarely, it seems, is he permitted to undertake an independent study program. Although other causes of student demonstrations may be advanced, O'Toole would argue that at least some stem directly from failure of educational institutions to remove these sources of dissatisfaction.

Instruction as a System. As a final factor, it is my premise in this paper that there is an increasing tendency today to attempt implementation of the systems approach in education. This approach, sometimes referred to as "The New Technology," may be defined as the application of a new perspective to the structure and operation of complex man-machine organizations. This new perspective is simply that we have come to view instruction as a system, not as a collection of appliances, buildings, personnel, and so forth (19, 20, 21).

An instructional system, therefore, may be defined as a set of components organized and integrated to achieve a clearly specified set of instructional goals. The components consist of teaching methods, items of equipment, media, instructors, students, and so forth (22).

More importantly, use of the systems approach in designing instruction demands that a fairly well-defined sequence of steps be followed. These steps contain as an early and most significant requirement the careful delineation of a set of behavioral objectives. Steps that may be recommended are:

(1) Determine existence of instructional need.
(2) Define work/life performance situations relevant to student population.
(3) Specify terminal behavioral objectives.
(4) Evaluate capabilities of entering students.
(5) Develop provisional instructional program.
(6) Construct devices to assess achievement programs.
(7) Administer program to representative students.
(8) Evaluate effectiveness of program and revise program if necessary.

While it has always been customary for instructors to provide expressions of instructional goals for their courses, these expressions have typically been given in *non*behavioral terms. It is noteworthy, therefore, that the systems approach—the technology—requires instructors to state their goals in *behavioral* terms. The result is that, while application of the technology may have a forceful impact on education, it may also create a problem.

Implications of the Factors

Perhaps the primary significance of these factors—educational inequality, knowledge growth, masses of students, dissatisfaction of youth, and the systems approach—is that they are all symptomatic of the demand for change.

Among other things, there seems to be a demand for a better definition of "where we're going." If our society is to prepare its youth for *tomorrow*, we need to arrive at some firm conclusions regarding where education is taking us *today*. And because of limited time, space, personnel, facilities, and so forth, we cannot afford to waste our efforts by filling the educational curriculum with subject matter that has questionable relevance to life.

Admittedly, the question of what is relevant is subject to debate—and always will be—but certainly it is clear that the youth of today are seriously challenging the relevance of the instruction they have received. In fact, many students feel so strongly about this that they are demanding to have a part in deciding the nature and content of their instruction. They feel, apparently, that they are able to make a better determination of relevance than has the professional educational community.

Finally, it appears that, while our society wants education for the masses, we don't want mass education. Consistent with this conviction, there is a strong movement in our country today toward individualization of instruction. The traditional, lock-step style of instruction where students are treated as though they all have equal ability and all have the same learning requirements, is giving way (1, 15, 23).

Although individualized instruction can be defined variously (e.g., one student at a time, the student proceeds at his own pace, each student has his own instructional materials, feedback is provided to each student), the meaning intended here is this:

> Individualized Instruction—a program of study that is fitted to the needs and characteristics of the learner at a given point in time, and in which the learner has a role in selecting what he studies, as well as how fast he proceeds.

This definition is consistent with that expressed elsewhere (e.g., 24).

Individualized instruction finds no real opposition except, perhaps, that arising from the monumental problems one faces in thinking about its implementation. And it is for this reason that a systems approach to instruction may represent a most worthwhile asset. The primary merit of the systems approach to the individualization of instruction stems from the requirements to specify instructional goals in straightforward behavioral terms. While any instruction may reasonably profit from stating its goals in behavioral terms, such terms are of particular benefit when individualizing instruction.

In fact, it is difficult to conceive how a meaningful program of individualized instruction could be constructed in the absence of behavioral goals. This is based on the premise, of course, that the focus of individualized instruction is on the performance capabilities of the individual student, and not simply on the content to be covered. Among other uses, one needs a set of behavioral objectives to determine what the student can and cannot do, for his program of instruction depends on the outcome.

There is no need to belabor the merit of the behavioral objective; much has been written about the concept and its contribution to learning (25, 26). The important thing is that, although instructors may acknowledge the utility of behavioral objectives, they have traditionally not prepared them in the past, and therefore are quite likely to be inadequately equipped to prepare them in the present. Useful and relevant behavioral objectives are hard to come by! In fact, difficulties encountered in generating statements of behavioral objectives may be so great as to encourage the formation of negative attitudes toward objectives. And the likely outcome is that individualization of instruction will not proceed.

The sum effect is that the instructor—whether at kindergarten or graduate school level—must acquire (or reaffirm, if he already possesses them) the skills needed to prepare statements of behavioral objectives. He must do this or be swept aside by the individualization movement.

This seems to be especially true for the college instructor, for it is at this level more than any other that a strong possibility exists that the instructor will have to *share* his objective-stating responsibilities with his students. Individualized instruction, remember, encourages the student to assist in deciding what to study. It also seeks to develop in him a capability to continue his education throughout life. But there is another reason for making the statement here. The need to share the responsibility arises also because, as mentioned earlier, the college student, frustrated and impatient, cannot accept past instruction as possessing much relevance. He thinks he can do a much better job of it, and he wants to have his say. Fortunately for both instructor and student, the most direct route to relevant instruction is via behavioral objectives.

In summary, the situation would seem to be this: individualization of instruction is "the name of the game," and its implementation can be facilitated by a system that fosters—no, *demands*—the forthright stating of behavioral objectives. Acceptance of these inevitabilities, especially by the college instructor, is highly desirable, if not mandatory. Furthermore, not only must the instructor be able to state such objectives, he must also acknowledge the high probability that he will do so in concert with the student. For that reason, if for no other, the onus is on the instructor to update his skills and to be prepared.

LITERATURE CITED

1. Goulet, Richard R. (Ed.). *Educational Change: The Reality and the Promise*, Citation Press, New York, 1968.

2. Worthen, Blaine R. "The Innovation Dilemma," *Strategies for Educational Change Newsletter*, vol. 1, no. 10, The Ohio State University, Columbus, 1966, pp. 1-4.

3. Kurland, Norman D. "The Impact of Technology on Education," *Educational Technology*, vol. 8, no. 20, 1968, pp. 11-15.

4. Adelson, Marvin (Ed.). "Planning Education for the Future: Comments on a Pilot Study," in *American Behavioral Science*, vol. 10, no. 7, 1967, entire issue.

5. Zacharias, J. "Innovation and Experiment in Education," in *A Progress Report of the Panel on Educational Research and Development*, U.S. Government Printing Office, Washington, 1964.

6. Gordon, Edmund W. "Programs of Compensatory Education," in *Social Class, Race, and Psychological Development*, Martin Deutsch, Irwin Katz, and Arthur R. Jensen (Eds.), Holt, Rinehart and Winston, Inc., New York, 1968, pp. 381-410.

7. Coleman, James M., *et al. Equality of Educational Opportunity*, U.S. Government Printing Office, Washington, 1966, pp. 219-220.

8. Licklider, J.C.R. "A Crux in Scientific and Technical Communication," *American Psychologist*, vol. 21, 1966, pp. 1044-1051.

9. Kuhn, Robert and Walter, Eugene. "The Astounding Knowledge Gap!" *The Plain Truth*, vol. 33, no. 11, 1968, pp. 9-13.

10. Libaw, Frieda B. "Information Handling in the Behavioral Sciences: Report of a First Convocation of a Conglomerate Clan," *American Behavioral Science*, vol. 10, no. 6, 1967, pp. 8-12.

11. Mee, John F. "The Knowledge Industry," *Indiana Alumni Magazine*, vol. 31, no. 2, 1968, pp. 22-26.

12. King, Gilbert W. "Automation and the Library of Congress," in *The Growth of Knowledge*, Manfred Kochen (Ed.), John Wiley and Sons, New York, 1967, pp. 102-126.

13. Mooers, Calvin N. "The Next Twenty Years in Information Retrieval," *American Documentation*, vol. 11, 1960, pp. 229-236.

14. Kochen, Manfred (Ed.). *The Growth of Knowledge*, John Wiley and Sons, New York, 1967.

15. Smith, Ann Z. (Ed.). *Education Recaps*, vol. 8, no. 2, Educational Testing Service, Princeton, N.J., 1968.

16. *Projections of Educational Statistics to 1976-77.* (1967 Edition), Office of Education, U.S. Government Printing Office, Washington, 1968.

17. O'Toole, John F., Jr. *Innovations in Instruction: Some Promising Directions in Higher Education,* SP-2894, System Development Corporation, Santa Monica, Calif., March 1968.

18. Ways, Max. "The Faculty is the Heart of the Trouble," *Fortune,* Time, Inc., Chicago, January 1969, pp. 94-97; 161-164.

19. Coulson, John E., and Cogswell, John F. *System Analysis in Education,* SP-1863, System Development Corporation, Santa Monica, Calif., January 1965.

20. Hoban, Charles F. "Man, Ritual, The Establishment and Instructional Technology," *Educational Technology,* vol. 8, no. 20, 1968, pp. 5-11.

21. Kaufman, Roger A., and Camody, C. *The New Look in Training: The Instructional Systems Approach,* Douglas Aircraft Co., Inc., Long Beach, Calif.; paper presented at the Air Transport Association Conference, Washington, October 1964.

22. Smith, Robert G., Jr. *The Design of Instructional Systems,* HumRRO Technical Report 66-18, November 1966.

23. Trump, J. Lloyd. "Innovation and Teacher Roles," in *Educational Change: The Reality and the Promise,* Richard R. Goulet (Ed.), Citation Press, New York, 1968.

24. Flanagan, John C. *Individualizing Education,* American Institutes for Research, Palo Alto, Calif.; paper presented to Division 15, American Psychological Assn., San Francisco, September 1968.

25. Mager, Robert F. *Preparing Objectives for Programmed Instruction,* Fearon Publishers, San Francisco, 1962.

26. Ammerman, Harry L., and Melching, William H. *The Derivation, Analysis, and Classification of Instructional Objectives,* HumRRO Technical Report 66-4, May 1966.

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13. ABSTRACT

Implementation of a strong movement in education today toward individualization of instruction can be facilitated by a systems approach, sometimes referred to as "The New Technology." The careful delineation of a set of behavioral objectives as an early step is required. The ability to specify objectives is deemed especially critical for the college instructor. In fact, it is contended that a partial solution to the frustrations voiced by today's student is one in which responsibility for determining instructional goals is *shared* by student and instructor.

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